

What Is Claimed Is:

1 1. A color-simulating apparatus comprising:

2 a light source device for providing modulated lights of three
3 primary colors, which are projected on an article and reflected
4 by the article;

5 a demodulation device for receiving the lights reflected by
6 the article and demodulating the lights to output signals
7 representing the intensity of the three primary colored lights;
8 and

9 a light-emitting device for generating a colored light
10 according to the intensity signals output from the demodulation
11 device.

1 2. The color-simulating apparatus as claimed in claim 1, wherein
2 the light source device comprises:

3 a three-primary-colored light source for providing three
4 primary colored lights; and

5 a modulation device for modulating the three primary colored
6 lights.

1 3. The color-simulating apparatus as claimed in claim 1, wherein
2 the demodulation device comprises:

3 an optical sensor for receiving the light reflected by the
4 article and converting optical signals to electrical signals; and

5 a demodulator for demodulating the electrical signals to
6 respectively output intensity signals of the three-primary-
7 colored lights.

1 4. The color-simulating apparatus as claimed in claim 1, wherein

2 the light-emitting device comprises at least one three-
3 primary-colored light source.

1 5. A color-simulating apparatus comprising:

2 a light source device for providing modulated light , which
3 is projected on an article and reflected by the article;

4 a filtering device for separating the light into lights of
5 three primary colors;

6 a demodulation device for receiving the three-primary-colored
7 lights and demodulating the lights to output signals representing
8 the intensity of the three primary colored lights; and

9 a light-emitting device for generating a colored light
10 according to the intensity signals of the three-primary-colored
11 lights output from the demodulation device.

12 6. The color-simulating apparatus as claimed in claim 5, wherein
13 the light source device comprises:

14 a white light source for providing a white light; and
15 a modulation device for modulating the white light.

16 7. The color-simulating apparatus as claimed in claim 5, wherein
17 the filtering device includes filters of three primary colors for
18 filtering out lights of three primary colors from the white light.

19 8. The color-simulating apparatus as claimed in claim 5, wherein
20 the demodulation device comprises:

21 an optical sensor for receiving the three-primary-colored
22 lights and converting optical signals to electrical signals; and

23 a demodulator for respectively demodulating the electrical
24 signals to obtain intensity signals of the three-primary-colored

7 lights.

1 9. The color-simulating apparatus as claimed in claim 5, wherein
2 the light-emitting device comprises at least one three-
3 primary-colored light source.

1 10. The color-simulating apparatus as claimed in claim 5, wherein
2 the light source device comprises:

3 a three-primary-colored light source for providing three-
4 primary-colored lights; and

5 a modulation device for modulating the three-primary-colored
6 lights.

7 11. The color-simulating apparatus as claimed in claim 5, wherein
8 the demodulation device comprises:

9 optical sensors for receiving the three-primary-colored
10 lights and converting optical signals to electrical signals;

11 filters for respectively receiving the electrical signals
12 output from the optical sensors and filtering out noises of the
13 electrical signals; and

14 demodulators for respectively demodulating the filtered
15 electrical signals to obtain intensity signals of the three-
16 primary-colored lights